

# Small Investor Demand and Allocation in Commercial Bank Managed IPOs

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# Motivation

## Scope of bank activities

- Glass-Steagall (1933)
- Gramm-Leach-Bliley (1999)

## Allocation of IPOs

- High first-day IPO return ~ High institutional allocation
- Do retail investors get the “lemons”?

## Analysis

- Allocation and demand in German IPOs
- Cross-selling data from bank balance sheets

# Outline

Do retail investors get the “lemons”?

- Not if they are with the lead underwriters
- Lead underwriters’ retail clients have
  - Higher demand for underpriced IPOs
  - Higher allocation of underpriced IPOs

Why not allocate “lemons” to retail investors?

- Cross-selling potential
- High IPO underwriting activity leads to increased
  - New brokerage accounts
  - Retail consumer loans

# Research on IPO Allocations

## Theoretical

- Benveniste and Spindt (1989)
- Fulghieri and Spiegel (1993)

## Empirical

- Hanley and Wilhelm (1995)
- Cornelli and Goldreich (2001, 2003)
- Ljungqvist and Wilhelm (2002)
- Aggarwal, Prabhala, and Puri (2002)

# IPO Data

## Description

- 72 German IPOs between 1997 and 2004
- Underwritten by leading five German commercial banks
- Own Retail for 72 IPOs
- Own and Other Retail for 44 IPOs

## Framework

- Existence of when-issued market
- Retail demand as substantial share of overall demand ( $\sim 30\%$ )

**Table 1**  
**Descriptive Statistics**

Variable	Mean	Median
LN Proceeds (in € million)	19.93	18.53
Shares offered (in million)	29.38	4.08
Subscription level	21.43	11.35
Syndicate size	5.58	4
UPDATE (in %)	2.23	5.33
Underpricing (in %)	25.73	4.76

**Table 2****Demand shares of retail investors  
(in percent of sum of shares demanded)**

	All	$UP \leq 0\%$	$0\% < UP \leq 25\%$	$25\% < UP$	
Lead	<i>44</i> 12.64	<i>13</i> 10.73	<i>15</i> 11.59	<i>16</i> 15.18	1.85*
Non-Lead	<i>72</i> 10.59	<i>21</i> 13.17	<i>27</i> 10.02	<i>24</i> 8.98	1.88*
z-stats	1.23	1.03	0.18	2.38**	

**Table 3**  
**Allocation shares of retail investors**  
**(in percent of sum of shares sold)**

	All	UP $\leq$ 0%	0% < UP $\leq$ 25%	25% < UP	
Lead	<i>44</i> 12.41	<i>13</i> 10.22	<i>15</i> 14.59	<i>16</i> 12.16	0.54
Non-Lead	<i>72</i> 10.60	<i>21</i> 13.07	<i>27</i> 10.73	<i>24</i> 8.30	1.92*
z-stats	1.18	0.62	0.88	2.54**	

**Table 4****Demand OLS Regression for IPOs**

	<b>Non-Lead Retail</b>			<b>Lead Retail</b>		
Constant	0.414 (2.40)**	0.429 (2.27)**	0.443 (2.13)**	0.200 (1.16)	0.258 (1.53)	0.244 (1.32)
LNPROCEEDS	-0.011 (1.27)	-0.013 (1.40)	-0.013 (1.36)	-0.001 (0.12)	-0.004 (0.41)	-0.003 (0.25)
LN Syndicate Size	-0.022 (1.10)	-0.022 (1.29)	-0.022 (1.22)	-0.071 (2.90)***	-0.071 (2.83)***	-0.065 (2.42)***
=1 if high-tech industry	0.004 (0.14)	-0.007 (0.23)	-0.008 (0.27)	-0.040 (1.53)	-0.041 (1.51)	-0.041 (1.44)
Underpricing	-0.031 (1.81)*	-0.031 (1.78)*	-0.031 (1.74)*	0.030 (1.97)*	0.030 (1.95)*	0.033 (2.13)**
= 1 if issue in 1999/2000		0.031 (1.19)	0.032 (1.23)		-0.011 (0.44)	-0.0152 (0.59)
Price Update			-0.004 (0.24)			-0.013 (0.76)
Number of Observations	72	72	72	44	44	44
R <sup>2</sup>	0.09	0.12	0.13	0.30	0.32	0.32

**Table 5**  
**Allocation OLS Regression for IPOs**

	Non-Lead Retail			Lead Retail		
Constant	0.210 (1.30)	0.226 (1.35)	0.004 (0.98)	0.218 (1.14)	0.401 (1.84)*	0.015 (0.10)
LNPROCEEDS	-0.002 (0.28)	-0.004 (0.46)	0.004 (0.55)	-0.001 (0.03)	-0.009 (0.74)	0.003 (0.43)
LN Syndicate Size	-0.004 (0.21)	-0.007 (0.36)	-0.014 (0.58)	-0.078 (2.84)***	-0.074 (2.25)**	-0.030 (1.36)
=1 if high-tech industry	-0.015 (0.54)	-0.0267 (0.97)	-0.014 (0.58)	-0.039 (1.32)	-0.043 (1.26)	0.006 (0.25)
Underpricing	-0.025 (1.76)*	-0.029 (1.81)*	-0.035 (1.68)*	0.014 (0.86)	0.016 (0.85)	-0.007 (0.54)
= 1 if issue in 1999/2000		0.052 (2.11)*	0.031 (1.38)		-0.031 (1.01)	-0.036 (1.82)*
Price Update		-0.001 (0.01)	0.007 (0.49)		-0.005 (0.23)	0.010 (0.80)
Demand (in %)			0.516 (4.96)***			0.783 (6.16)***
Number of Observations	72	72	72	44	44	44
R <sup>2</sup>	0.10	0.11	0.50	0.25	0.28	0.67

# Deutsche Bundesbank Data

## Description

- Balance sheets
- Brokerage accounts
- Borrowers
- Interest Rates

## Framework

- Largest Continental European market for equity issues
- German banks traditionally as universal banks
- IPO activity concentrated in a few banks

**Table 6**  
**Growth rate in number of retail brokerage accounts by IPO**  
**Lead underwriters**

	Big players (4)	Newcomers (5)	Non-underwriters (6)
1993	2.87%	-7.86%	-5.52%
1994	6.65%	7.61%	3.46%
1995	-3.21%	-3.88%	-4.14%
1996	1.93%	1.97%	-2.92%
1997	4.22%	4.31%	-2.32%
1998	5.57%	11.34%	1.79%
1999	19.85%	10.15%	1.14%
2000	16.65%	12.64%	9.41%
2001	-2.54%	0.91%	-0.11%
2002	0.93%	-1.66%	2.81%
2003	0.58%	-2.64%	-2.35%
<b>Sub-periods</b>			
1993-1996	2.00%	-0.71%	-2.34%
1997-2000	11.37%	9.56%	2.42%
2001-2003	-0.36%	-1.14%	0.09%

**Table 7**  
**Multivariate analysis – Growth in number of brokerage accounts**

	OLS estimation			IV estimation		
	Growth in brokerage accounts (in %)			Number of IPOs	Growth in brokerage accounts (in %)	
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.082 (0.87)	0.040 (0.45)	0.034 (0.38)	-3.477 (1.52)	0.091 (0.91)	0.058 (0.59)
LNASSETS	-0.004 (0.84)	-0.002 (0.35)	-0.001 (0.28)	0.211 (1.65)	-0.005 (0.91)	-0.003 (0.51)
Growth in assets	0.085 (1.22)	0.040 (0.59)	0.035 (0.50)	2.188 (1.05)	0.078 (0.91)	0.032 (0.47)
Loan rate	-0.096 (2.23)**	-0.108 (3.09)**	-0.108 (3.03)**	-1.393 (1.19)	-0.094 (1.96)*	-0.103 (2.46)**
Deposit rate	0.480 (1.65)	0.419 (1.22)	0.431 (1.30)	-4.709 (1.17)	0.482 (1.67)	0.430 (1.25)
Brokerage fees	-0.035 (0.33)	-0.036 (0.36)	-0.030 (0.31)	0.003 (0.11)	-0.037 (0.33)	-0.039 (0.37)
Number of IPOs	0.017 (9.75)***	0.008 (2.56)**			0.018 (3.51)***	0.011 (1.76)*
Number of IPOs (t-1)				0.306 (4.02)***		
Growth in shareholder base		0.197 (4.65)***	0.196 (4.92)***	5.048 (2.14)**		0.183 (4.72)***
=1 if 1999 or 2000		0.039 (3.46)***	0.046 (4.55)***	2.135 (3.52)***		0.031 (1.82)*
Number of underpriced IPOs			0.009 (3.75)***			
N	122	122	122	122	122	122
R <sup>2</sup>	0.31	0.39	0.39	0.49	0.31	0.39

**Table 8**  
**Cross-selling impact of brokerage accounts**

Product combination	Number of new customers	Share	Number of products
Brokerage Account only	9.143	15.65%	1.00
Brokerage Account and Savings Account	18.034	30.87%	2.00
Brokerage Account and Savings Plan	6.730	11.52%	2.00
Brokerage Account and Current Account	6.479	11.09%	2.00
Brokerage Account, Savings Account, and Savings Plan	2.541	4.35%	3.00
Brokerage Account, Current Account, and Savings Plan	2.162	3.70%	3.00
Brokerage Account and Other Products	13.331	22.82%	2.49
Total	58.420	100.00%	2.04

# Economic significance

## Transaction fees

- Transaction volume per year and account: €30,000
- Fees: 1% of transaction volume → €300

## Fixed fees

- €20 to €100
- Minimum: 0.15% of account value

## Summary for four big players in Germany

- Less than 1 million brokerage accounts in 1993
- Increase of 450,000 brokerage accounts until 2003

**Table 9**  
**Multivariate analysis – Growth in amount of retail consumer loans**

	OLS estimation			IV estimation		
	Growth in consumer loans (in %)			Number of IPOs	Growth in consumer loans (in %)	
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	4.141 (2.35)**	4.045 (2.31)**	3.995 (2.11)**	-3.477 (1.52)	4.454 (2.22)**	4.764 (2.32)**
LNASSETS	-0.197 (2.20)**	-0.188 (2.11)**	-0.186 (1.89)*	0.211 (1.65)	-0.220 (2.01)*	-0.232 (2.15)**
Growth in assets	-1.675 (0.66)	-2.56 (1.04)	-2.732 (1.12)	2.188 (1.05)	-1.936 (0.72)	-2.865 (1.03)
Loan rate	-0.146 (0.24)	-0.209 (0.34)	-0.246 (0.41)	-1.393 (1.19)	-0.229 (0.42)	-0.419 (0.73)
Deposit rate	2.673 (0.83)	2.388 (0.76)	2.782 (0.74)	-4.709 (1.17)	2.772 (0.85)	2.837 (0.80)
Brokerage fees	-0.023 (1.53)	-0.022 (1.51)	-0.208 (1.36)	0.003 (0.11)	-0.023 (1.63)	-0.023 (1.57)
Number of IPOs	0.218 (2.33)**	0.211 (2.33)**			0.263 (2.31)**	0.328 (2.40)**
Number of IPOs (t-1)				0.306 (4.02)***		
Growth in shareholder base =1 if 1999 or 2000		3.604 (2.59)**	3.516 (2.67)**	5.048 (2.14)**		3.061 (2.17)**
		-0.706 (4.23)***	-0.573 (2.97)**	2.135 (3.52)***		-1.026 (3.94)***
Number of underpriced IPOs			0.250 (1.76)*			
N	122	122	122	122	122	122
R <sup>2</sup>	0.18	0.22	0.22	0.49	0.18	0.19

**Table 10**  
**Multivariate analysis – Growth in amount of corporate loans**

	OLS estimation			IV estimation		
	Growth in corporate loans (in %)			Number of IPOs	Growth in corporate loans (in %)	
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.295 (0.77)	0.386 (1.08)	0.361 (0.98)	-3.477 (1.52)	0.355 (0.75)	0.445 (0.90)
LNASSETS	-0.016 (0.60)	-0.021 (0.89)	-0.020 (0.80)	0.211 (1.65)	-0.020 (0.68)	-0.025 (0.82)
Growth in assets	0.659 (1.86)*	0.799 (2.58)**	0.809 (2.63)**	2.188 (1.05)	0.609 (1.22)	0.774 (2.30)**
Loan rate	-0.189 (0.55)	-0.167 (0.48)	-0.175 (0.49)	-1.393 (1.19)	-0.173 (0.57)	-0.150 (0.48)
Deposit rate	-0.910 (0.20)	-0.849 (1.03)	-0.864 (1.06)	-4.709 (1.17)	-0.967 (1.31)	-0.811 (1.00)
Brokerage fees	0.001 (0.20)	0.001 (0.19)	0.001 (0.20)	0.003 (0.11)	0.001 (0.15)	0.001 (0.16)
Number of IPOs	-0.013 (0.97)	0.004 (0.83)			-0.004 (0.10)	0.014 (0.29)
Number of IPOs (t-1)				0.306 (4.02)***		
Growth in shareholder base =1 if 1999 or 2000		-0.598 (0.83)	-0.579 (0.79)	5.048 (2.14)**		-0.642 (0.82)
		-0.039 (0.29)	-0.028 (0.22)	2.135 (3.52)***		-0.065 (0.42)
Number of underpriced IPOs			0.001 (0.01)			
N	122	122	122	122	122	122
R <sup>2</sup>	0.03	0.04	0.04	0.49	0.03	0.04

# Conclusion

## Empirical results

- Suggest that banks encourage customers to demand “hot” IPOs
- Growth in brokerage accounts and consumer loans linked to number of (underpriced) IPOs

## Implications

- Underwriters care about their retail customers
- Cross-selling as important consideration
- Underpricing as a potential consequence